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Nudge Theory and Social Innovation: An analysis of citizen and government initiatives during Covid-19 outbreak in Malaysia

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Abstract—The study presents an analysis of how the Nudge Theory was mobilized in Malaysia during the Covid-19 outbreak. It was observed that during the mandatory lockdown, citizens explored various social innovation solutions to cope with the fear, anxiety and loss of income during the pandemic. The government deployed strategies which exemplified elements of the Nudge Theory to drive nationalism and citizenship. The study assembles data from public reports, media releases and social media postings which document social innovation initiatives throughout the pandemic period. Analysis has revealed how the Nudge Theory were put into play, affecting social behaviours and empathy, which led to various social innovation initiatives.

Keywords—Citizenship, Covid-19 pandemic, Nudge theory, social innovation.

I. INTRODUCTION

The COVID-19 pandemic has unwittingly triggered innovation within the society in Malaysia. According to [1], a nudge is a form of communication technique, which can be expressed as 'pushing and tapping someone gently on the back of their shoulder' with aims to influence decision-making [2] and intervene in the choices made [3]. Nudge Theory [3], rooted in behavioural economics, is an approach of changing behaviour to investigate 'failures' in human cognition to help people make informed choices. In a typical life, human choices and behaviours are based on past experiences and routines. Nudges act on the response to an environmental change, such as a physical move to new surroundings, or a reaction triggered by disasters such as the current Covid-19 pandemic. To cope with the complexity of the environmental change, especially when it evolves with agility, what is displayed could be a representation of a fundamental human need to

survive. Such thinking, coupled with a set of actions that are focused on surviving, coping and overcoming, could stimulate an agile innovation. Agility is generally defined as the ability to move quickly and easily. In times of crisis, it is commonly associated with acts of innovation. Agile innovation is inherently about adapting and thriving on a given changed situation. Innovation is not limited to the uptake of technology, but rather it consists of continuously questioning oneself in response to change of decisions, situation and environment.

The reality of the crisis has inadvertently strategised nudging to become a necessary tool to build an individual and community-led social innovation. During the pandemic, it was observed that the government has been using a purposeful nationalistic nudge to control the COVID-19 spread at a high economic and social cost, by convincing Malaysians to abide by the Movement Control Order (MCO) rules – closure of schools and universities, compulsory wearing of masks, social/physical distancing, and frequent handwashing. With the increase in socio- and global economic crises, the government was also nudged to create rapid policy response. Dramatic overhaul policies in public health and economic stimulus were put into place, to help citizens and organisations recover from the effect of the pandemic. During the MCO, the majority of the citizens unknowingly was also nudged to respond to new ways of living. Many began to initiate innovations and solutions. Through nudging, Malaysians began to display their agility and competence in dealing and coping with the effects

of the pandemic. Nudging focuses on changing people's environment and choice on the basis that people have the freedom to change in response to their environment or choice they experience. The core of the theory must be based on freedom of choice and that it should benefit people.

Social innovation is a trending 21st-century concept about the developmental characteristics of the economy and its society. It is an interactive pedagogy through co-creation within a parsimonious space of dimensions looking at collective needs, satisfactions, actions, inclusive relations, and political empowerment to a new view of human development and social relations at the supra-local scales. Social innovation is a people-led initiative whereby it directly creates and forms a relationship of needs from strategies, principles, values, ethics, community dynamics and governance. From the COVID-19 pandemic, these strategies by the people had focussed on saving jobs, finding food, maintaining home and shelters, supporting neighbours, homeless and elderly, and participating in supporting NGOs either financially or through delivering skills and materials. Through various social innovation initiatives, it is observed how agile citizens became, to overcome limitations of resources, movement and money. Agility, in this paper, is associated with the concept of social resilience.

In the early days of the pandemic during the MCOs, social media and the news were the only sources of communication nudge. It is a traditional way of communication approach used commonly in Malaysia (as shown in Table I) in the digital era, and the stimuli for one to be creative can be limited.

Given the news on the shortage of facemasks and PPEs in hospitals have quickly sparked and ignited grassroots innovations among the Malaysians to produce temporary measures. For instance, the front-liners on duty have resorted to using plastic bags to protect themselves [4]. These shared values of the pandemic have trickled down even to organisations, besides the NGOs, and community-led initiatives and interventions.

The aim of this paper is to provide insights into the nudge aspects and strategies observed through the various examples from public reports, media releases and social media postings that document social innovation initiatives in Malaysia throughout the pandemic period.

TABLE I. COMMUNICATION NUDGING TYPES DURING THE PANDEMIC

Communication Types	Tools
Social Media	#hashtags, Facebook, Instagram, videos, Whatsapp
T.V.	News and press conferences, videos, advertisements, educational shows
Radio	News and press conferences, advertisements
Service providers	SMS messages
Scientific Publications	Reports, Strategic plans, journals, informed plans and policies, newspapers
Internet	Websites, online businesses and learning, online entertainments, online banking
Promotional items	Posters, leaflets

In Part II of the paper, we present the concept of nudge theory and social innovation that serve as the basis for the discussions in Part III on the nudge indicators for social innovations and outcomes of innovations during the MCOs in Malaysia.

II. NUDGE FOR SOCIAL INNOVATION

A. Nudge Theory

The nudge theory originates from the area of behavioural science, economics and political theory. It refers to positive reinforcement, where indirect suggestions can impact and influence people's decisions without them even realising it. The nudge theory was popularised by American academics Thaler and Sustein in a book 'Nudge: Improving Decisions About Health, Wealth and Happiness', as an approach "*to understanding and changing people's behaviour, by enabling analysing, improving, designing (and re-design of influences), and offering free choices for people, so that their decisions are more likely to produce helpful outcomes for those people and society*". In another word, it is a thinking system. As the nudge theory may be new, it is still evolving as the use of nudge is emerging in broader disciplines.

Table II summarises the Thaler-Sustein nudge theory. While there are other works, which refer to it as "nudge rule of thumb", it refers to thinking processes that people use to decipher their personal, emotional and subjective experiences, and instinctively, to assess a situation, construct views and then make decisions.

TABLE II. THALER-SUSTEIN NUDGE THEORY

Nudge type	Brief Description
Anchoring and adjustment	We are using known things to estimate unknown things.
Availability	Familiarity and perceived commonness or rarity.
Representativeness	Assumptions based on stereotypes.
Optimism/over-confidence	Hopefulness and denial. Complacency.
Loss aversion	False valuation is based on possession.
Status quo bias and inertia	Fear of change. Laziness, aversion to complexity, 'small print', and so forth
Framing	Presentation or orientation of information that alters its perceived nature
Temptation	Greed, inability to delay gratification, fear of missing out.
Mindlessness	Poor concentration. Negligence. Complacency.
Self-control strategies	Habits and routines to counter weaknesses.
Conforming - following the herd	The mob effect. Affirmation. Embarrassment. Fashion. Lack of confidence.
Spotlight effects	Self-consciousness, causing anxiety and stress
Priming	Preparing people for change.
Stimulus-response compatibility	Language and signage design - the signal matches the message.
Feedback	To people, during and after thinking and decisions.

Source: Taken from the Nudge Toolkit - <https://www.businessballs.com/improving-workplace-performance/nudge-theory/>

As humans are creatures of habit, behaviours are deeply ingrained and automatic. The pandemic has allowed people to form new habits and break old ones. It is assumed that when the restriction is lifted and with the continuous nudging, more than 50% would continue to live in the new norm.

In multiple public spaces, some countries have shown pieces of evidence of the success of behavioural nudges in response to the pandemic. The nudge approach taken is starkly different from one country to another, and at times, takes on different forms from within the same country. The next section describes how the Nudge theory initiates social innovation during the pandemic.

B. Social Innovation

Social innovation is commonly known as a people-led initiative. The Stanford Social Innovation defines 'social innovation' as innovation with real social activities or programmes that are tilted towards social values that benefit the public or society as a whole rather than private values or gains for entrepreneurs and investors. The delivery of social values that innovations or solutions is expected is not concerned with profit but more of the quality of life, improving the welfare of individuals and community (well-being), creating new social relationships or collaborations. Nudges,

in essence, allow people to have the freedom of choice for the benefit of the people. It creates room for complexity and multi-level thinking and the opportunity to grow a co-evolutionary nature of social innovation.

The criterion of social innovation in TEPsIE [6] can be extended and tailored to meet the particularities of social innovation during the MCOs. The modified TEPsIE social innovation types concerning only the pandemic in Malaysia are as presented in Table III. There are eight forms or types of social innovation. These types of social innovations were deployed during the pandemic.

TABLE III. SOCIAL INNOVATION CRITERION TYPES CONCERNING THE PANDEMIC

Social Innovation Criterion	Description
New services and products	New intervention or new programmes to meet social need
New practices	New services which require new roles or relationship
New processes	Co-production of new services
New rules and regulations	The creation of new laws or regulation or policy diffusion
New organisational forms	Hybrid organisational forms, creation of task forces or committees
Improvement	Iterative model of monitoring changes in social needs, updated products or processes
Level of emergence (individual, organisations, or both)	Intensity or urgency of innovation and enablers at a different level of the crisis, the collaborative aspect of social innovations
Social needs	Addressing social needs within the society based on the availability of resources, including the collaborative dimension of the social innovation process

Social innovation often fills in the gaps in the aftermath of a crisis, e.g. in the 2008 economic recession crisis. Interestingly, a similar pattern can also be seen in the pandemic crisis to the type of social innovation.

As the world adapts to new norms of living triggered by the COVID-19 pandemic, nudging has sparked numerous social innovations within the various societies, organisations, and communities, including those in Malaysia.

The impact of the criterion of social innovation can be measured. It is useful to effectively and sustainably shape and track social innovation activities and their subsequent solutions and products within a community and organisation.

III. NUDGING INDICATORS IN SOCIAL INNOVATION

This part of the paper discusses the analysis of the aspects of the Nudge Theory that were mobilised in Malaysia that have led to social innovation activities and outcomes. The discussions are based on the synthesis of findings from public reports, media releases and social media postings, which document social innovation initiatives [4, 8, 10, 11] throughout the pandemic period. While social innovation indicators in Part II build around inputs, enabling factors, outputs and processes in a combined and well-balanced fashion, the aspects of nudging that can be observed from the synthesis include:

- Adjustment
- Priming
- Stimulus responses
- Empathy arousal
- Improvement from the processes and products
- Availability of resources to build new products
- Priming innovations,
- Availability

Table IV presents how these nudge strategies are applied in each social innovation type (the types and examples as shown in Table III) only in Malaysia.

As observed during the COVID-19 pandemic, the Malaysian people acted together towards frugal innovation strategies to make the best with the limited resources. A large scale of grassroots innovation was seen during the MCOs. Some businesses in some countries produce PPEs and masks for the hospitals. In Malaysia, garbage bags, cling wraps and plastic files were used to make PPEs and face shields. Some resorted to repurposing plastic bottles as face shields.

Foot-operated hand sanitiser dispenser stands were also built. Until today, there are a variety of these touchless dispenser innovation systems developed and built. For example, frugal table shields made of sliding doors and glass windows were innovatively built by the rural park rangers in Mulu, Sarawak.

Such kinds of social nudges are strongly linked with prosocial behaviours. Consequently, reactions and responses to it will result in powerful and positive social innovations.

TABLE IV. NUDGING INDICATORS FOR SOCIAL INNOVATION IN MALAYSIA

Nudges	Social Innovation (S.I.) Descriptions
Adjustment and priming, stimulus responses messages from MoH, WHO and public health	Piggyback on top of existing behaviours, such as handwashing habits and tie social distancing with queueing up. S.I. Criterion: New products, processes and programmes – SOP of physical distancing. Introduced the 3C and 3W messages.[7]
Empathy arousal from the front liners and community, conforming to the social needs, feedback	Due to the shortage of PPEs equipment with the rapid increase of COVID-19 cases, many volunteered to prepare PPEs. Hashtags have created movements to create an ecosystem for Malaysian to volunteers and or donate meals to front liners, the poor and the homeless. S.I. Criterion: New processes, level of emergence – Several NGOs, public figures, designers, prison inmates, tailors and the public volunteered to sew protective gears for the front liners [4]
Improvement from the processes and products to entrepreneurship	Production of face shields, face masks initially for front liners has been expanded to the public. S.I. Criterion: New processes – the creation of new websites and the expansion of the companies. E.g. Me.reka, Biji Biji Design [4]
Availability of resources to build new products	With easy access to hand sanitiser and hand soap, this makes hand washing on the spot more accessible. To support this behavioural change, the public has innovated the mechanical handwashing systems for hospitals, clinics, supermarkets, companies, schools and universities. S.I. Criterion: New product – new intervention of a mechanical foot dispenser hand sanitiser and sinks have been designed, built and implemented.
Priming innovations, availability, feedback, framing	Due to the unavailability of face masks and face shields in a remote and rural national park, the rangers and staff had to innovate to ensure SOPs are being followed for the safety of each staff before the park can be fully operated. S.I. Criterion: Improvement - Repurposed sliding doors and windows to build table shields at park rangers' office. High touch surfaces can transmit viruses, swipe gestures, or the use of mobile apps can be utilised. Technologists are working together to develop and deploy a smart parking system that uses automatic license plate recognition and integrate with mobile wallet applications. S.I. Criterion: New processes – ticketless parking system linked to mobile wallet [8]

Prosocial behaviours are "acts that are socially defined as generally beneficial to other people, are shaped by both cognitive and affective processes" [9]. Moreover, the core of effective processes is empathy. An example of the volunteering spirit, sadness or concern root from empathy arousal.

COVID-19 has certainly nudged new innovative practices and strategies, for example, in the fields of health, education, workplaces, and businesses. Co-creating solutions with community, building trust in the systems and the people, have built a supportive ecosystem of resilience systems and innovative social solutions. As many successful solutions have become obsolete in the post-COVID-19 new norm, therefore continuous social innovation is still critically required in the face of continuous change, especially to social enterprises and entrepreneurs.

IV. CONCLUSION

This study presents how Malaysians have coped with life when the Covid-19 pandemic strike. The experience of limited social movements illustrates how social innovation could spark initiatives in fulfilling human needs which would not have been needed in life before the pandemic began.

Various social and developmental impacts were observed, mostly triggered by the Nudge approach. It has shown that community initiatives were directly and indirectly nudged in social innovation, and the solutions have a more profound impact on society and provide positive externalities.

Government and public health continue using Nudge approach as it has shown its effectiveness. With social innovation, many Malaysians have been nudged directly and indirectly to volunteer to build and innovate solutions that can be used during the MCOs and post COVID-19.

Table V shows the summary of the nudging indicators that have directly and indirectly allowed social innovation in both testing and launching of innovations found during the MCOs among communities in Malaysia. Empathy arousal from social media has been as the strongest nudge motivator for innovation during the pandemic.

Future research will analyse the resilience of Malaysians in business and local entrepreneurship, where the impact of the pandemic is seen at its worst.

TABLE V. SUMMARY OF NUDGING INDICATORS VS. SOCIAL INNOVATION CRITERION IN RELATION TO SOCIAL INNOVATION DURING THE MCOs

SI Criterion Nudging Indicator	New services and products	New practices	New processes	Improvement	Level of emergence	Social needs	New rules and regulations	New organisational
Anchoring and adjustment	√	√	√		√	√		
Availability	√			√	√	√		
Representativeness						√		√
Optimism/over-confidence								
Loss aversion								
Status quo bias and inertia								
Framing				√				
Temptation								
Mindlessness								
Self-control strategies								
Conforming - following the herd			√	√				
Spotlight effects								
Priming	√		√					
Stimulus-response compatibility	√		√					
Feedback		√			√	√		
Empathy arousal	√	√	√	√	√	√	√	√

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